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1 RECORD OF ORAL HEARING  
2  
3 UNITED STATES PATENT AND TRADEMARK OFFICE  
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5  
6 BEFORE THE BOARD OF PATENT APPEALS  
7 AND INTERFERENCES  
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10 *Ex parte* TOSHIBA CORPORATION  
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13 Appeal 2008-2522  
14 Application 10/779,661  
15 Technology Center 1600  
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18 Oral Hearing Held: Tuesday, June 10, 2008  
19  
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21  
22 Before ROMULO DELMENDO, LINDA M. GAUDETTE, and MICHAEL  
23 COLAIANNI, *Administrative Patent Judges*  
24

25  
26 ON BEHALF OF THE APPELLANTS:  
27

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34

1           The above-entitled matter came on for hearing on Tuesday,  
2 June 10, 2008, commencing at 9:01 a.m., at the U.S. Patent and Trademark  
3 Office, 600 Dulany Street, Alexandria, Virginia, before Jennifer M.  
4 O'Connor, Notary Public.

5           THE CLERK: Good morning. Calendar No. 1, Appeal No.  
6 2008-2522. Mr. Baker.

7           JUDGE DELMENDO: Good morning, Mr. Baker.

8           MR. BAKER: Good morning. How are you?

9           JUDGE DELMENDO: Welcome to the board.

10          MR. BAKER: Thank you very much.

11          JUDGE DELMENDO: You know the rules. You will have 20  
12 minutes.

13          MR. BAKER: Okay.

14          JUDGE DELMENDO: So you may proceed when you are  
15 ready.

16          MR. BAKER: Should I give a card to the court reporter?

17          JUDGE DELMENDO: Yes, please.

18          MR. BAKER: Good morning, Your Honors. I am here on  
19 behalf of assignee Toshiba Corporation regarding application serial number  
20 10/779661. The claim in dispute is claim 14, which is directed to a semi-  
21 conductor device, including, among other things, a gate dielectric electrode  
22 formed in a trench.

23                 The gate electrode is formed in an overlapped relation relative  
24 to a tip portion of a first diffusion layer and a tip portion of a second

1 diffusion layer. The respective tip portions are not covered by first and  
2 second insulating layers.

3 As taught in the specification at page 15, lines 9-12, this  
4 configuration has the benefit providing a stable configuration relative to two  
5 other configurations identified in a specification. Figure 6 identifies one of  
6 the background configurations wherein the gate and the impurity regions are  
7 aligned.

8 Figure 8 illustrates an embodiment where the gate electrode and  
9 the diffusion regions are separated. Our claim is directed to the  
10 configuration where there is an overlapping portion between the impurity  
11 layer and the gate electrode.

12 The reference being applied against the claims is *Xiang*, which  
13 concerns a method of fabricating a MOSFET semi-conductor device. Of  
14 particular importance, column 4, lines 46 to 48 of *Xiang* acknowledges that  
15 the figures are not drawn to scale. However, the office action being  
16 appealed asserts that figure 12(b) teaches the overlapping feature of claim  
17 14.

18 The applicants disagree that such a teaching is made by that  
19 figure. One of the reasons we make that assertion is because in at least one  
20 important instance the description of *Xiang*'s invention is inconsistent with  
21 the figures. If you look at column 6, lines 31 and 32 of *Xiang*, it teaches that  
22 a gate opening 214 has a bottom at the channel region of the MOSFET 152.

23 But if you look at that figure, and I think it's figure 5(b) of  
24 *Xiang*, you'll see that the trench opening is actually wider than the channel.

1 So how could the bottom of the gate, which is where the trench opening, be  
2 the channel if it's actually wider than the channel illustrated?

3 This is just one prime example of what's described in *Xiang*  
4 being different than what is illustrated, which is consistent with Xiang's  
5 statement that these drawings are not intended to be to scale to teach  
6 something, one element relative to another regarding what that particular  
7 orientation would be.

8 JUDGE DELMENDO: Why is that not the separate  
9 embodiment from the 12(b) embodiment?

10 MR. BAKER: Well, I think what -- why is it not a separate  
11 embodiment?

12 JUDGE DELMENDO: The one that you are referring to in  
13 column 6?

14 MR. BAKER: Well, in *Xiang* it's all a progression of how they  
15 manufactured the device.

16 JUDGE DELMENDO: I see.

17 MR. BAKER: So what you -- what you see in figure 5(b) is a  
18 progression and -- with figure 12(b).

19 JUDGE DELMENDO: I see.

20 MR. BAKER: So these are all one embodiment going into a  
21 final conclusion and it's just an example of what Xiang describes being  
22 inconsistent with what he illustrates, which reflects -- what he's teaching is  
23 what he describes.

24 Those figures are there, of course, to help the reader understand  
25 what's being described, but those figures were not presented as teachings per

1 se. So for the examiner to rely upon the orientation of the source and the  
2 drain relative to the gate as a teaching of the overlapping feature is a reach.

3 JUDGE GAUDETTE: I guess it also says just prior to the line  
4 that you mentioned, the gate opening 214 has sidewalls of the insulator  
5 material from the spacers 168, or the layer of insulator material 204. And  
6 what that seems to suggest is that during that etching, they can remove the  
7 sidewalls 168 just as you do in your invention, can remove all or a portion of  
8 the sidewalls.

9 MR. BAKER: So if you removed the sidewalls 168 as part of  
10 the etching when you're making the regions 154 and 156, you would think  
11 there would be some correspondence between the different depths of 154  
12 and 156 relative to where those sidewalls are located.

13 To me, I just don't see any relationship between 168 and 154,  
14 whether it's there or whether it's removed in part in any of the figures in  
15 *Xiang*. And of particular interest, when speaking regarding the drain and the  
16 source, there's only one paragraph and that's in column 5, lines 15 to 24, and  
17 the only statement regarding the drain and source is that they're provided in  
18 the P-well.

19 JUDGE GAUDETTE: I think the point I'm trying to make is  
20 that it seems to indicate that you can widen that gate opening to any extent  
21 that you desire.

22 MR. BAKER: I would agree with that, that that is suggested by  
23 the passage, that by etching you could open that trench as wide as -- I would  
24 assume as wide as the spacers are. As long as you have spacers you could  
25 widen it by etching; I would agree with that statement.

1           The etching can remove the sidewalls, but ultimately you have  
2 to put the insulators in, which is the whole purpose of *Xiang*. So there's no  
3 teaching of how much etching you would remove to account for the  
4 insulators and to also account for any overlapping of the source and the drain  
5 relative to the gate electrode.

6           The appellant doesn't see where that is taught or suggested by  
7 *Xiang*. It appears that the source and the drain are illustrated because they  
8 are provided as a semi-conductor device and as taught in column 5, lines 15  
9 to 24, to provide it in a P-well; otherwise, there's no other significance of  
10 those two items relative to what is being taught by *Xiang*. It just happens to  
11 be, I think, an ancillary feature which has to be described for completeness  
12 and the figures are shown to illustrate those features.

13           But there's no teaching of any relationship between the  
14 alignment of the source and the drain relative to the gate; it's just silent in  
15 that regard. An artist is given this in crafting -- not in crafting, in the  
16 drawing section of a law firm and he's told, provide a source and a drain  
17 that's drawn in there. The inventor hasn't indicated in his -- in his  
18 specification that it means anything. Then all of a sudden that becomes the  
19 teaching, which they treat as prior art, and I don't think that was the purpose  
20 of treating prior art in that manner, that an illustration without a description  
21 all of a sudden becomes prior art, unless that was the intent of the inventor to  
22 teach that configuration, or if it was known to people of ordinary skill in the  
23 art.

24           But if by circumstance or happenstance you happen to have a  
25 feature that reads on a claim, such a drawing or such an illustration absent a

1 teaching in the specification, in my opinion, does not amount to a teaching;  
2 it amounts to happenstance.

3 JUDGE DELMENDO: But Mr. Baker, in the context, for  
4 example, 112 written description, you could rely on the drawings to amend  
5 the written description to include what would have been disclosed by that  
6 drawing.

7 MR. BAKER: I discussed that with my colleagues this  
8 morning. I agree, but very few specifications explicitly include a statement  
9 that their drawings are not to scale. And I would think that if an applicant  
10 were to try to amend their claims to include a feature based on the drawings,  
11 and at the same time included a statement in his specification that the  
12 drawings were not to scale, that the examiner would question such an  
13 amendment as being new matter.

14 JUDGE DELMENDO: I guess perhaps I'm not quite  
15 understanding, because when you say to scale, does that necessarily mean  
16 include or encompass relative position or --

17 MR. BAKER: Well, if I were to rely on this drawing as a  
18 teaching of a device including source and drain 154 and 156, I can clearly  
19 rely upon that as a teaching. But if I were to rely upon 154 and 156 as  
20 teaching an overlapping region relative to the gate and that was going to be  
21 presented in *Xiang* as a claim and it was not described, I believe relying  
22 upon this drawing in light of the statement that the drawings are not to scale,  
23 without any further description of an overlapping region, I think that that  
24 would result in a 112 first paragraph rejection if we are talking about the  
25 hypothetical situation of *Xiang* presenting a claim of that scope.



1 JUDGE DELMENDO: Do you have any other arguments, Mr.  
2 Baker?

3 MR. BAKER: Nothing beyond pointing to the appeal brief and  
4 to the reply brief with regards to the case law cited for how to treat drawings  
5 as prior art.

6 JUDGE DELMENDO: Okay, Judge Gaudette, any additional  
7 questions?

8 JUDGE GAUDETTE: No.

9 JUDGE DELMENDO: Judge Colaanni?

10 JUDGE COLAIANNI: No questions.

11 MR. BAKER: Thank you very much.

12 JUDGE DELMENDO: Okay, Mr. Baker. Your case is  
13 submitted.

14 MR. BAKER: Thank you.

15 JUDGE DELMENDO: Okay, thank you.

16 Whereupon, at 9:14 a.m., the proceedings were concluded.